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EXAMINER	
HO, TUAN V	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/683,953	**Applicant(s)** WALLACE, DIANE	
	Examiner Tuan V. Ho	**Art Unit** 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-73* is/are pending in the application.
4a) Of the above claim(s) *1-10,30 and 66* is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *11-22,24,25,27-31,33,38-54,57-61,63 and 68-70* is/are rejected.
7)☒ Claim(s) *13,23,26,32,34-37,43,53,56,62 and 64-67* is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Applicant’s election of the species of Fig. 1, claims 11-29, 31-59 and 61-73 without traverse is acknowledged. Claims 1-10, 30 and 60 have been canceled by the Applicant.

2. The drawings are objected to because legends are required for Figure1, 4 and 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).
>
> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

3. Claim 69 is rejected under 35 U. S. C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 69 defines a program embodying functional descriptive material. However, the claims do not define a computer readable medium or memory and are thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" - Guidelines Annex.. IV). That is, the scope of the presently

claimed signal processing program can range from paper on which the program is written, to a program simply contemplated and memorized by a person.

4. Claim 69 is rejected under 35 U. S. C. 101 because the claim is directed to neither a "process' nor a "machine", but embraces or overlaps two different statuory classes of invention set forth in 35 U.S.C. 101.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11, 12, 18, 19, 27, 29, 33 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Kyuma (US 5,513,713).

With regard to claim 11, Kyuma discloses in Fig. 3, a color video camera system that comprises the system for performing electronic imaging procedures (video camera system as shown in Fig. 3 is used to capture an image of an object, col. 4, lines 22-43), comprising a diffusion filter configured to receive input light and responsively generate diffused output light (diffusing plate 11, col. 4, line 31); and an electronic camera that includes an image sensor for capturing a reference image from said diffused output light through said diffusion filter (color video camera as shown includes R, G and B filters; wherein the video camera is used to take a picture of an object as a reference image so as to correct a white balance, col. 4, lines 25-26 and col. 4, lines 34-36), said reference image providing a uniform neutral averaged-summation of said input light for calculating color correction values to perform a white balance procedure for accurately representing captured electronic images (the video camera provides an uneven distribution color information by using diffusing plate 11; wherein the color information is inherently obtained by a uniformed neutral averaged summation of the input object light so as to perform accurately white balance procedure on the captured image, col. 4, lines 31-43; noted that the reference image does not specifically defined in the claim, any image taken by the video camera using plate 11 is considered as a reference image).

With regard to claim 12, Kyuma discloses in Fig. 3, a color video camera system that comprises the electronic camera documents color characteristics of said input light by storing said uniform neutral averaged-summation of said input light as said reference image onto an electronic storage device (video cameras shown in Fig. 3 inherently includes a memory so as to store object images for displaying or archiving).

With regard to claim 18, Kyuma discloses in Fig. 3, a color video camera system that comprises the diffusion filter is utilized for performing said white balance operation in medical applications and scientific applications to enable accurately utilizing photographic techniques for detecting color shifts before human vision is able to perceive said color shifts, said medical applications including early detections of said color shifts to permit accelerated diagnoses of corresponding medical conditions (the video camera of Kyuma can be used in medical and scientific applications since the applications are intended uses of the Kyuma camera).

With regard to claim 19, Kyuma discloses in Fig. 3, a color video camera system that comprises the electronic camera is alternately implemented as a digital still camera, an video camera, a scanner device, an electronic imaging device, and a computer device (the Kyuma camera is a video camera as shown in Fig. 3).

With regard to claim 27, Kyuma discloses in Fig. 3, a color video camera system that comprises the diffusion filter is positioned adjacent a lens of said electronic camera to provide said input light to said sensor device through said lens, said electronic camera then capturing said reference image onto a digital data storage device within said electronic camera, said diffusion filter providing a selectable amount of said input light to activate light sensitive cells in said image sensor whereby an exposure adjustment of exposure controls of said electronic camera is manually or automatically set, said image sensor then capturing said reference image to document on said digital data storage device said selectable amount of said input light and white balance characteristics corresponding to lighting conditions that produce said input light (an exposure operation control in the Kyuma camera must be inherently in the camera control by an iris or a shutter since the image is too dark or too bright without exposure controls).

With regard to claim 29, Kyuma discloses in Fig. 3, a color video camera system that comprises the diffusion filter is fabricated in a lightweight, non-fragile, and inexpensive manner from substantially flat and translucent disks of plastic-like material (Diffuse plate 11 of Kyuma inherently includes lightweight, non-fragile and inexpensive manner and translucent disk).

With regard to claim 33, Kyuma discloses in Fig. 3, a color video camera system that comprises the diffusion filter enables capturing said reference image as a full-frame neutral-density image that accurately summarizes existing lighting conditions at a point of capture for said captured electronic images, color balance characteristics of said reference image then being utilized to identify exact color correction values that are required to compensate for said existing lighting conditions to thereby achieve an accurate white balance for said captured electronic images (the Kyuma diffuse plate 11 inherently includes the characteristics above).

With regard to claim 38, Kyuma discloses in Fig. 3, a color video camera system that comprises the

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 20, 31, 38 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyuma.

With regard to claim 20, Kyuma does not disclose the diffusion filter includes one or more color-altering filters for performing said white balance procedure with desired color balance characteristics, said one or more color-altering filters being selectable to implement said diffusion filter as a color-neutral device, said one or more color-altering filters alternately being selectable to implement said diffusion filter to have one or more selectable colorcasts.

However, Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the diffusion plate of Kyuma so as to obtain a plate that can be used in different light conditions because doing so would allow a user to customize the camera in order to capture an object image under different color cast without replace it with a different thereby to provide cost saving for the camera system).

With regard to claim 31, Official Notice is taken for a flat prismatic disk of translucent image blocking material resembling plastic functioning to admit approximately 180 degrees.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the plate 11 of Kyuma with flat prismatic disk of translucent image blocking material resembling plastic functioning to admit approximately 180 degrees so as to diffuse the input light because the use of the prismatic disk would allow a user to provide more accurate diffused images and thereby to provide more image details.

With regard to claim 38, Official Notice is taken for a digital camera that can simultaneously control both exposure and white balancing based upon light conditions since that would allow a user to capture an object image with a high speed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the camera system of Kyuma so as to control simultaneously exposure and white balance since doing so would allow a user to capture images with high speeds based on a light condition.

Wit regard to claim 73, Official Notice is taken that a diffuse plate is a prism array; where the prism array would provide more evenly in light diffusion conditions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plate 11 of Kyuma so as to obtain a prism array diffuse plate because doing so would provide the Kyuma camera with more even light distribution and thereby to obtain more accurate white balance corrections.

7. Claims 14, 16, 17, 21, 22, 39, 40 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyuma in view of McGarvey (US 2002/010959).

With regard to claim 14, Kyuma discloses the same subject matter as discussed with respect to claim 1, except that the reference image is directly utilized by said electronic camera to perform said white balance procedure before capturing and storing said captured electronic images, said reference image being alternately utilized in a post-processing environment to perform said white balance procedure after said captured electronic images have been initially captured by said electronic camera without performing said white balance procedure.

McGarvey teaches in Fig. 2, a digital camera that comprises white balance circuit; where the circuit is used to capture a neutral card board and store in a memory as a reference image and the reference image is used to correct the white balancing of future images under the same light conditions([0025] and [0027]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the camera system of Kyuma as the same manner as disclosed by McGarvey so as to obtain a stored white balanced image in a memory because doing so would allow a user to correct a white balance of an object with more accurately and faster.

With regard to claim 16 Kyuma discloses the same subject matter as discussed with respect to claim 1, except that diffusion filter functions as an illuminance integrator when said image sensor captures said reference image, said diffusion filter having a broad light-acceptance angle of approximately 180 degrees (diffusion plate 11 of Kyuma is a flat plate that can inherently accept a broad light angle up to 180 degrees).

With regard to claim 17, Kyuma discloses the same subject matter as discussed with respect to claim 1, except that the diffusion filter captures said reference image to document lighting conditions that exist when said captured electronic captured images are captured and stored by said electronic camera, said lighting conditions including incident light documented with said image sensor and said diffusion filter facing one or more light sources, said lighting conditions alternately including reflective light documented with said image sensor and said diffusion filter facing one or more photographic subjects (McGarvey discloses white balanced reference images being stored in a memory under different light conditions [0027]).

With regard to claim 21, McGarvey discloses in Fig. 2, a digital camera system that comprises the reference image functions as a white-balance standard reference for preserving identical white-balance characteristics throughout multiples stages of a digital imaging-processing procedure ([0020]).

With regard to claim 22, McGarvey discloses in Fig. 2, a digital camera system that comprises the reference image is utilized to reference an entire image archive to a single constant neutral-density reference, said reference image thereby enabling consistent and accurate color reproduction for said entire image archive, said reference image being also used to reference multiple unrelated image archives to a single white-balance standard, said multiple unrelated image archives containing image files of various colorcasts derived from multiple imaging sources (white balance setting [0027] and [0028]).

With regard to claims 39, McGarvey discloses in Fig. 2, a digital camera system that comprises the computer device with an image processing software program performs a post-processing color correction procedure upon said captured electronic images by selecting said reference image, calculating color correction values from a colorcast represented by said reference image, and then applying said color correction values to one or more of said captured electronic images that require said post-processing color correction procedure ([0025]).

With regard to claims 40, McGarvey discloses in Fig. 2, a digital camera system that comprises the diffusion filter to capture said reference image that is then utilized as a colorcast standard for crating a custom white balance for performing said white balance procedure upon any image data that is captured in a same or similar lighting condition as said reference image [0025] to [0027].

With regard to claim 69, McGarvey discloses a computer that inherently includes a software program [0025].

8. Claims 15, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyuma in view of Ooi et al (US 4,527,189).

With regard to claim 15, Kyuma does not explicitly disclose the diffusion filter is implemented for detachably mounting over a lens of said electronic camera, said diffusion filter being alternately implemented integrally with said electronic camera for automatic or manual positioning in front of said sensor device, said diffusion filter being further alternately implemented in a separate imaging window that is associated with an independent image capture device.

However, Ooi et al teaches using a detachable diffusion plate 122 in a video camera so as to obtain a white balanced reference image with more accurately, Fig. 4, col. 5, lines 1-5 and 36.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the diffusion plate 11 of Kyuma in the same manner as disclosed by Ooi et al in order to obtain a removable diffusion filter that is placed in the position as needed and thereby to improve efficiency of the Kyuma camera operations.

With regard to claim 24, Ooi et al teaches using a plate 122 that is removable from the camera optical axis as shown in Fig. 4.

With regard to claim 25, Ooi et al teaches diffuse plate 122 inherently includes characteristic such as a relatively flat and lightweight disk having a disk diameter approximately equal to a lens diameter of a lens of said electronic camera, said diffusion filter being a passive device without electronic components, said diffusion filter being attachable to said electronic camera in an unobtrusive manner to enable a convenient and accurate assessment of existing white balance characteristics due to specific lighting conditions at a capture location of said captured electronic images.

Method claims 41, 42, 44-52, 54-55, 57-63, 63, 68 and 70 correspond to apparatus claims 11, 12, 14-22, 24, 25, 27-31, 33, 38 and 40 and are analyzed the same as previously discussed with respect to the apparatus claims.

Claims 71 and 72 recite what was previously discussed with respect to claims 11.

9. Claims 13, 23, 26, 32, 34-37, 43, 53, 56, 62, and 64-67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kim et al (US 6,249,601) discloses a color correction in a digital camera.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan Ho whose telephone number is (571) 272-7365. The examiner can normally be reached on Mon-Fri 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tuan V Ho/

Primary Examiner, Art Unit 2622